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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/992,880	11/05/2001	James D. Beasom	125.014US01	7668

7590 11/24/2003

Attn: Scott Lundberg
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EXAMINER

PHAM, HOAI V

ART UNIT	PAPER NUMBER
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2814

DATE MAILED: 11/24/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/992,880	JAMES D. BEASOM	
	Examiner	Art Unit	
	Hoai V Pham	2814	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 and 8-37 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 15-37 is/are allowed.
- 6) ☒ Claim(s) 1-5 and 8-11 is/are rejected.
- 7) ☒ Claim(s) 12-14 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
 * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
 a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 10 and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by Guldi [U.S. Pat. 5,525,529] newly cited.

With respect to claim 10, Guldi (figs. 1-2, cols. 5-6) discloses a method of forming an integrated circuit, the method comprising:

forming an oxide layer (32) on and in contact with a surface of a substrate (24), the substrate having a plurality of isolation islands, wherein at least one isolation island is used in forming a semiconductor device (see fig. 1 and col. 5, lines 3-14);

patterning the oxide layer to expose predetermined areas of the surface of the substrate (see fig. 1 and col. 5, lines 20-22);

depositing a nitride layer (37) overlaying the oxide layer and the exposed surface areas of the substrate, wherein the nitride layer is in contact with the oxide layer and all of the exposed surface areas created by the patterning the oxide layer (see fig. 1 and col. 5, lines 30-31); and

implanting ions (B) through the nitride layer, wherein the nitride layer is an implant screen for the implanted ions (see fig. 1 and col. 5, lines 62-67).

With respect to claim 11, Guldi discloses diffusing the ions to form device regions (40, 42) in selected isolation islands in the substrate (see fig. 2 and col. 5, lines 62-67).

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-5, and 8-9 are rejected under 35 U.S.C. 102(b) as being anticipated by Lou [U.S. Pat. 6,468,858] newly cited.

With respect to claim 1, Lou (fig. 4, col. 4) discloses a method of forming a contact opening (15) through a dielectric layer (13) overlaying an oxide layer (12) in an integrated circuit, the method comprising:

forming a layer of mask material (14) overlaying and in contact with the dielectric layer (13) (see fig. 4);

patterning the layer of mask material to expose a pre-selected portion of the dielectric layer (see fig. 4 and col. 4, lines 34-35); and

forming anisotropic contact opening (15) that extend through the layer of dielectric (13) and the layer of oxide (12) using a dry etch with a single mask (see col. 4, lines 38-40).

With respect to claim 2, Lou discloses removing the layer of mask material (see fig. 5 and col. 4, lines 43-44).

With respect to claim 3, Lou discloses that the mask material (14) is photo resist mask material (see col. 4, line 43).

With respect to claim 4, Lou discloses that the patterning of the layer of mask material further comprises: removing a portion of the mask material (14) adjacent a portion of the dielectric layer (13) where the contact opening (15) is to be formed (see fig. 4 and col. 4, lines 34-35).

With respect to claim 5, Lou discloses that the dry etch used is a reactive ion dry etch (see col. 4, lines 39).

With respect to claims 8 and 9, Lou discloses that the dielectric constant of the dielectric layer is higher than the dielectric constant of the layer of oxide and wherein the dielectric (13) is silicon nitride (see col. 4, line 31).

Response to Arguments

5. Applicant's arguments with respect to claim 1-5 and 8-11 have been considered but are moot in view of the new ground(s) of rejection.

Allowable Subject Matter

6. Claims 15-37 are allowed.
7. Claims 12, 13, and 14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
8. The following is a statement of reasons for the indication of allowable subject matter: the prior art of record fails to disclose all the combination of the process of forming an integrated circuit recited in claims 12-14, including the step of using the nitride layer in at least one of the isolation islands as a capacitor dielectric in forming a capacitor and performing a dry etch to form anisotropic contact openings that extend through the layer nitride and the layer of oxide.

Conclusion

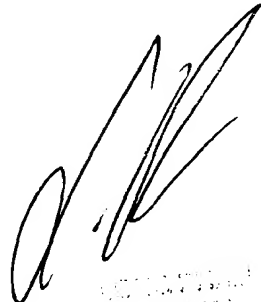
9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hoai V Pham whose telephone number is 703-308-6173. The examiner can normally be reached on 6:30A.M. - 6:00P.M..
10. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael M. Fahmy can be reached on 703-308-4918. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7724 for After Final communications.

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11. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

HP
Hoai Pham
November 7, 2003



HOAI PHAM
November 7, 2003